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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte YASUSHI KUBOTA and SEIJI MURAKAMI

Appeal 2009-003213
Application 10/717,235
Technology Center 2600

Decided: November 30, 2009

Before KENNETH W. HAIRSTON, JOHN A. JEFFERY, and
CARL W. WHITEHEAD, JR., *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 1, 5-10, 12, and 13. Claims 2-4 and 11 have been indicated as containing allowable subject matter. Fin. Rej. 6; Br. 2. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

STATEMENT OF THE CASE

Appellants invented an integrated circuit for scan driving that can significantly reduce the chip size. Specifically, odd-numbered output pads, driver circuits, and flip-flops are arranged in a first region. Likewise, even-numbered output pads, driver circuits, and flip-flops are arranged in a second region. In these regions, the respective elements are arranged in columns and rows in different directions.¹ Claim 1 is illustrative:

1. An integrated circuit for scan driving being used in sequentially selecting and driving scanning lines in a display, which has said plural scanning lines and plural signal lines arranged crossing each other in a matrix configuration, and which has a pixel arranged at each cross point; in this integrated circuit for scan driving, comprising:

a chip, having plural output pads arranged as a column in a first direction, plural drive circuits for driving said scanning lines to the active state through said output pads, respectively, and plural selection circuits for individually selecting said driver circuits in a line-sequential scanning cycle in an order corresponding to the order of said scanning lines;

the odd-numbered output pads, driver circuits and selection circuits corresponding to odd-numbered scanning lines are all arranged in a first region,

the even-numbered output pads, driver circuits and selection circuits corresponding to the even-numbered scanning lines being all arranged in a second region adjacent to said first region in said first direction;

said first region, in an order corresponding to the order of said odd-numbered scanning lines, said odd-numbered output pads, driver circuits and selection circuits being arranged as columns in said first direction, respectively, and, at the same time, said output pads, driver circuits and selection circuits corresponding to each of the scanning lines are arranged in the same row in the second direction nearly orthogonal to said first direction;

¹ See generally Abstract; Spec. 11-13; Fig. 1.

and, in said second region, in an order corresponding to the order of said even-numbered scanning lines, said even-numbered output pads, driver circuits and selection circuits are arranged as columns in said first direction, and, at the same time, said output pads, driver circuits and selection circuits corresponding to each of the scanning lines being arranged in the same row in said second direction.

The Examiner relies on the following as evidence of unpatentability:

Wakai	US 4,908,710	Mar. 13, 1990
Fujikawa	US 6,545,655 B1	Apr. 8, 2003

Appellants' admitted prior art in Figures 5, 7, 9, 10 and Pages 2 and 4-6 of the present application ("APA").

1. The Examiner rejected claim 1² under 35 U.S.C. § 112, ¶ 2 as failing to particularly point out and distinctly claim the subject matter Appellants regard as the invention. Ans. 3.
2. The Examiner rejected claims 1 and 5-7³ under 35 U.S.C. § 103(a) as unpatentable over APA and Fujikawa. Ans. 3-6.
3. The Examiner rejected claims 8-10, 12, and 13 under 35 U.S.C. § 103(a) as unpatentable over APA, Fujikawa, and Wakai. Ans. 6-7.

² The Examiner limited this rejection to only independent claim 1, and did not reject dependent claims 2-7 despite these claims containing the noted alleged defect by virtue of their dependency from claim 1. *See* Ans. 3.

³ Claim 7 depends upon objected-to claims 2 and 3. Br. 2. *See also* Ans. 2 (confirming this status as correct). Despite this inconsistency, we nonetheless group claim 7 with claims 1, 5, and 6 in treating this rejection in this appeal. *See* n.4, *infra*, of this opinion.

THE § 112 REJECTION

Regarding independent claim 1, the Examiner finds that there is insufficient antecedent basis for the term “*the* second direction” in lines 20 and 21. Ans. 3; emphasis added. Appellants, however, contend that since the recited second direction is already defined by orthogonality to the first direction, the term “the second direction” is permissible. Br. 6.

The issue before us, then, is as follows:

ISSUE

Under § 112, have Appellants shown that the Examiner erred in finding that “the second portion” in claim 1 lacks antecedent basis so as to render the claim indefinite?

FINDING OF FACT

The record supports the following finding of fact (FF) by a preponderance of the evidence:

1. Appellants’ claim 1 recites, in pertinent part, “said output pads, driver circuits and selection circuits corresponding to each of the scanning lines are arranged in the same row in the second direction nearly orthogonal to said first direction” Br. 8; Claims App’x.

PRINCIPLES OF LAW

Claims must “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention.” 35 U.S.C. § 112, ¶ 2. The test for definiteness under 35 U.S.C. § 112, second paragraph, is whether “those skilled in the art would understand what is claimed when the

claim is read in light of the specification.” *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1576 (Fed. Cir. 1986) (citations omitted).

“The failure to provide explicit antecedent basis for terms does not always render a claim indefinite. . . . [D]espite the absence of explicit antecedent basis, [i]f the scope of a claim would be reasonably ascertainable by those skilled in the art, then the claim is not indefinite. . . .” *Energizer Holdings Inc. v. Int’l Trade Comm’n*, 435 F.3d 1366, 1370-71 (Fed. Cir. 2006). Antecedent basis can also be implied. *Id.* (holding that the term “anode gel” implicitly provided antecedent basis for a “zinc anode” in the same claim).

ANALYSIS

We will not sustain the Examiner’s rejection of claim 1 under § 112, second paragraph. Claim 1 recites, in pertinent part, “said output pads, driver circuits and selection circuits corresponding to each of the scanning lines are arranged in the same row in *the second direction* nearly orthogonal to said first direction” FF 1; emphasis added.

Although the term “*the second direction*” in lines 20 and 21 of claim 1 lacks explicit antecedent basis since it is the first instance of the term in the claim, that fact alone is hardly dispositive of whether the claim as a whole would be indefinite. *See Energizer Holdings*, 435 F.3d at 1370-71. Rather, the question is whether this lack of antecedent basis renders the scope of claim 1 unascertainable by ordinarily skilled artisans.

Based on the record before us, we answer this question “no.” As Appellants indicate (Br. 6), claim 1 recites that the second direction is “nearly orthogonal to said first direction” FF 1. Since the claim clearly defines the second direction in terms of the first direction, skilled artisans would have no trouble ascertaining the scope of claim 1 when interpreted in light of the Specification, despite the lack of explicit antecedent basis for “the second direction.” *See Energizer Holdings*, 435 F.3d at 1370-71. The claim is therefore definite under § 112, second paragraph.

For the foregoing reasons, Appellants have persuaded us of error in the Examiner’s rejection of claim 1 under § 112.

THE OBVIOUSNESS REJECTION OVER APA AND FUJIKAWA

Regarding representative claim 1,⁴ the Examiner finds that APA discloses all of the claimed subject matter except for:

- (1) the selection circuits for selecting driver circuits in an order corresponding to the scanning line order, and
- (2) the odd- and even-numbered output pads, driver circuits, and selection circuits arranged in different regions with the recited column and row arrangement, as claimed. Ans. 3-5.

The Examiner, however, cites Fujikawa as teaching these features in concluding the claim would have been obvious. Ans. 5.

⁴ Although Appellants argue claims 1 and 5-7 together as a group (*see* Br. 6), we nonetheless treat claim 7 separately since it depends from claims 2 and 3 which have been indicated as containing allowable subject matter. Fin. Rej. 6. *See also* Br. 2 (noting that claims 2 and 3 are objected to); Ans. 2 (confirming this status as correct). Accordingly, we select claim 1 as representative of the group comprising claims 1, 5, and 6. *See* 37 C.F.R. § 41.37(c)(1)(vii).

Appellants argue that although Fujikawa shows arrangements of regions of pixels with drivers, the reference does not show any pertinent internal arrangements of items within the drivers that relate to the limitations of claim 1. Br. 6.

The Examiner, however, notes that APA—not Fujikawa—was cited for these features. Ans. 7-8. The Examiner adds that Fujikawa’s two vertical drivers 25 and 26 drive odd- and even-numbered rows, respectively, and therefore skilled artisans would have incorporated this teaching in APA such that its selection circuits and drivers would correspond to each other in order and be separated into two regions. Ans. 8.

The issue before us, then, is as follows:

ISSUE

Under § 103, have Appellants shown that the Examiner erred in rejecting claim 1 by finding that APA and Fujikawa collectively teach or suggest an integrated circuit with a chip with the recited arrangement of output pads, drive circuits, and selection circuits for selecting driver circuits in an order corresponding to the scanning lines as claimed?

FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

APA

2. The Examiner’s factual findings regarding APA (Ans. 3 and 4) are undisputed. We therefore adopt these findings as our own.

Fujikawa

3. We adopt the Examiner's factual findings regarding Fujikawa (Ans. 5).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). If the Examiner's burden is met, the burden then shifts to the Appellants to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. *See In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

ANALYSIS

We will sustain the Examiner's obviousness rejection of claim 1 essentially for the reasons indicated by the Examiner (Ans. 3-5, 7, and 8). As the Examiner indicates (Ans. 7-8), Appellants' argument regarding Fujikawa as allegedly not showing "pertinent internal arrangements of items within the drivers" (Br. 6) is simply not germane to the reason the Examiner cited the Fujikawa reference. *See* FF 3. Rather, the Examiner relied on APA—not Fujikawa—for the disputed aspects of claim 1. Ans. 7-8.⁵ Since

⁵ "Fujikawa does not need to show internal arrangements regarding the output pads, drive circuits and selection circuits because these elements are taught in the APA." Ans. 7-8.

the Examiner's findings in this regard are undisputed (FF 2), Appellants have not persuasively rebutted the Examiner's prima facie case of obviousness for claim 1.

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner's rejection of representative claim 1. Therefore, we will sustain the Examiner's obviousness rejection of that claim, and claims 5 and 6 which fall with claim 1.

Claim 7, however, depends from claims 2 and 3 which are indicated as containing allowable subject matter. Fin. Rej. 6. *See also* Br. 2 (noting that claims 2 and 3 are objected to); Ans. 2 (confirming this status as correct). By virtue of this dependency, the Examiner has failed to make a prima facie case for an obviousness rejection of claim 7 since it contains each and every limitation of claims 2 and 3—limitations that have been indicated as allowable. *See id.* Accordingly, we will not sustain the Examiner's rejection of claim 7.

THE OBVIOUSNESS REJECTION OVER APA, FUJIKAWA, AND WAKAI

Regarding representative claim 8,⁶ the Examiner finds that APA and Fujikawa collectively teach all of the claimed subject matter except for first and second clock signals as claimed. The Examiner, however, concludes that the claim would have been obvious in view of Wakai's teaching two respective clock signals (Φ_{yo} and Φ_{ye}) that (1) drive odd and even scanning drive circuits, respectively, and (2) have an inverse phase relation with respect to each other. Ans. 6-7.

⁶ Appellants argue claims 8-10, 12, and 13 together as a group. *See* Br. 6-7. Accordingly, we select claim 8 as representative.

Appellant argues that since Wakai's shift registers 401, 402 and their corresponding clocks are on opposite sides of the LCD panel, "Wakai would not make obvious anything about two shift registers and drivers on the same side." Br. 6-7. The Examiner, however, notes that APA and Fujikawa collectively teach this feature, and Fujikawa was not cited for that reason. Ans. 8.

FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

Wakai

4. We adopt the Examiner's factual findings regarding Wakai (Ans. 6-8).

ANALYSIS

We will sustain the Examiner's obviousness rejection of claim 8 essentially for the reasons indicated by the Examiner (Ans. 6-8). As the Examiner indicates (Ans. 8), Appellants' contention that "Wakai would not make obvious anything about two shift registers and drivers on the same side" (Br. 6) is simply not germane to the reason the Examiner cited the Wakai reference. *See* FF 4. Rather, the Examiner relied on the collective teachings of APA and Fujikawa—not Wakai—for the disputed aspects of

claim 8. Ans. 8.⁷ Since the Examiner's findings in this regard are undisputed (*see* FF 2-3), Appellants have not persuasively rebutted the Examiner's *prima facie* case of obviousness for claim 8.

For the foregoing reasons, Appellants have not persuaded us of error in the Examiner's rejection of representative claim 8. Therefore, we will sustain the Examiner's rejection of that claim, and claims 9, 10, 12, and 13 which fall with claim 8.

CONCLUSIONS

Appellants have shown that the Examiner erred in rejecting (1) claim 1 under § 112, and (2) claim 7 under § 103. Appellants, however, have not shown that the Examiner erred in rejecting claims 1, 5, 6, 8-10, 12, and 13 under § 103.

ORDER

The Examiner's decision rejecting claims 1, 5-10, 12, and 13 is affirmed-in-part.

⁷ “[T]he teaching of the shift registers and drivers on the same side is already taught by the APA as modified by Fujikawa.” Ans. 8.

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No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

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